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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Virginie Faineant

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EXAMINER

MATTIS, JASON E

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary	Application No.	Applicant(s)	
	09/988,290	FAINEANT ET AL.	
	Examiner	Art Unit	
	Jason E. Mattis	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 8, 18 and 20-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 18, and 20-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed 5/23/06. Claims 4-7, 9-17, and 19 have been cancelled. New claims 23-30 have been added. Claims 1-3, 8, 18, and 20-30 are currently pending in the application

Claim Objections

2. Claim 1 objected to because of the following informalities:

Regarding claim 1, the phrase "such as IP logical sub-networks, private networks, or multi-recipient groups" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. It is recommended that the phrase "such as" be removed from the claims. See MPEP § 2173.05(d). Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 8, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. (U.S. Pat. 6310893 B1) in view of Yuan et al. (U.S. Pat. 6310893) and Dillon et al. (U.S. Pat. 5652795).

With respect to claim 1, Gudat et al. discloses a method of sending data packets in an access network or satellite infrastructure network **(See column 15 line 48 to column 16 line 6 and column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a method of sending data packets in a wireless wide area network, which uses low earth orbit satellites)**. Gudat et al. also discloses that the network supports sub-networks combining different terminal stations of the network **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network having sub-networks, such as a home network and a foreign network combining different mobile nodes, which are terminal stations, of the network)**. Gudat et al. further discloses that each data packet is associated with an addressing header **(See column 6 lines 3-14 of Gudat et al. for reference to data packets having IP headers including source addresses and destination addresses)**. Gudat et al. also discloses that each terminal station of the network is associated with a satellite terminal or a ground station located in the coverage of a particular sport of a particular satellite **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to each mobile node being associated with a home agent, which is a satellite terminal or ground station in the embodiment using low earth orbit satellites, and for reference to the home agents being in a particular coverage area, which the mobile nodes may also be in or may move away from)**.

Gudat et al. further discloses the addressing header of each packet further containing a label field containing an identifier characteristic of one sub-network to which a target terminal station to which the packet is addressed belongs (**See column 6 lines 15-63 and Figure 2 of Gudat et al. for reference to the addressing header of packets using a care-of address, which is a label field containing the address of a foreign agent of a sub-network to which the mobile node belongs**). Gudat et al. does not disclose that the label field also contains the spot in which the satellite terminal or the ground station with which the target terminal is associated is located. Gudat et al. also does not disclose using the identifier to transmit the packet to the at least one spot associated with the identifier. Gudat et al. further does not disclose that a satellite terminal or ground station located in the spot has a list of authorized identifiers used as a reception filter so that the satellite terminal or ground station processes the packet only if the identifier in the packet is in the list.

With respect to claim 20, Gudat et al. does not disclose that the satellite has plural spot beams.

With respect to claim 21, Gudat et al. does not disclose that the label is selected from a set of plural labels each representing a different combination of sub-network and at least one satellite spot.

With respect to claim 22, Gudat et al. does not disclose that the headers of at least some data packets destined for terminals in the same sub-network but in different satellite spots will contain different labels.

With respect to claims 1 and 20-22, Yuan et al., in the field of communications, discloses a header of a packet in a satellite communication system that contains both an identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located **(See column 4 line 50 to column 5 line 34 and Figure 3 of Yuan et al. for reference to a cell 300, which is a type of packet, used in a satellite network 110, with the cell header 310 including a downlink beam locator field 340, which is a label field that includes the identity of a satellite 150, which is the same as an identifier of a sub-network defined by all the nodes associated with the satellite 150, and also includes the identity of a particular downlink beam, or spot, on which the cell 300 is to be transmitted and for reference to using the downlink beam locator field to transmit the packet on the downlink beam identified)**. Yuan et al. also discloses that the satellite has plural spot beams and that the labels are selected from multiple labels representing a different combination of sub-network and at least one satellite spot with packets destined for terminals in the same sub-network but in different satellite spots containing different labels **(See column 4 line 50 to column 5 line 34 and Figure 3 of Yuan et al. for reference to satellites multiple downlink beams, or spots, and for reference to each downlink beam locator field 340 being selected from labels represented different combinations of satellite identities and downlink beam identities with packet that are destined for terminals in the same satellite sub-network but in different satellite beams having different labels)**. Using a header of a packet in a satellite communication system that contains both an

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identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located has the advantage of allowing address resolution and routing of the packet to be performed with less processing since the network and spot routing information is carried explicitly in the header.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Yuan et al. to combine using a header of a packet in a satellite communication system that contains both an identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located, as suggested by Yuan et al. with the system and method of Gudat et al., with the motivation being to allow address resolution and routing of the packet to be performed with less processing since the network and spot routing information is carried explicitly in the header.

With respect to claim 1, Dillon et al., in the field of communications, discloses a satellite terminal having a list of authorized identifiers used as a reception filter so that the satellite terminal processes the packet only if the identifier in the packet is in the list **(See column 2 lines 30-50 of Dillon et al. for reference to a an adaptor card that is part of a computer, which is a satellite terminal, including an Access Table, which is a list including authorized address fields, which are identifiers, used as a reception filter so that frames that do not have an address found in the Access Table are discarded and not processed)**. Using a satellite terminal having a list of

authorized identifiers used as a reception filter so that the satellite terminal processes the packet only if the identifier in the packet is in the list has the advantage of allowing a satellite terminal to received data frames containing multiple data streams from a satellite, while only processing the data streams that the satellite terminal is authorized to receive.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Dillon et al., to combine using a satellite terminal having a list of authorized identifiers used as a reception filter so that the satellite terminal processes the packet only if the identifier in the packet is in the list, as suggested by Dillon et al., with the system and method of Gudat et al. and Yuan et al., with the motivation being to allow a satellite terminal to received data frames containing multiple data streams from a satellite, while only processing the data streams that the satellite terminal is authorized to receive.

With respect to claim 2, Gudat et al. discloses that data packets are sent with no connection between the sending satellite terminal or the sending ground station and the receiving satellite terminal or the receiving ground station **(See column 3 line 46 to column 4 line 25 of Gudat et al. for reference to sending packets using the Mobile IP protocol, meaning the data packets are sent hop-by-hop without setting up dedicated connects through the network between sources and destinations)**.

With respect to claim 3, Gudat et al. discloses that terminal stations consist of user terminals, routers, and data or service servers **(See column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to terminal stations including laptops 76,**

which are user terminals, routers 84, and mobile routers 78, which act as foreign agents to service address resolution requests).

With respect to claim 8, Gudat et al. discloses that the data packets are containers adapted to contain IP packets (See column 6 lines 35-64 and Figure 2 of Gudat et al. for reference to data packets being tunneled by encapsulating an IP packet with an extra outer IP packet header).

With respect to claim 23, although the combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose that each sub-network has a different Internet service provider, have different sub-networks owned by different Internet service providers as part of a communications network is old and well known in the art of communication. Having sub-networks of different Internet service providers has the advantage of allowing users to be able to communicate with each other regardless of which Internet service provider is used to connect to the network.

With respect to claim 24, although the combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose that processing of the data packet by the satellite terminal comprises extracting the address of the target terminal and sending the packet to the target terminal station, this process is old and well known in the art of satellite communication. Extracting the address of the target terminal and sending the packet to the target terminal station has the advantage of allowing different data streams received in packets from a satellite to be properly routed to intended destination terminals.

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5. Claims 18, 26, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. in view Yuan et al. and Dillon et al. as applied to claims 1-3, 8, and 20-24 above, and in further view of Cable et al. (U.S. Pat. 6570895).

With respect to claim 18, Gudat et al. discloses a satellite telecommunications system implementing the method of claim 1 **(See column 15 line 48 to column 16 line 6 and column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a method of sending data packets in a wireless wide area network, which uses low earth orbit satellites)**. Gudat et al. also discloses at least one satellite terminal having a table for each Internet service provider with which are associated user terminals connected to satellite terminals with the table establishing a relationship between target user terminal addresses and the label associated with them and the terminal listening to receiving labels of sub-network **(See column 5 lines 30-34 of Gudat et al. for reference to correspondence nodes, which are satellite terminals, having a binding cache, which is a table establishing relationship between target user terminals and care-of addresses associated with them and for reference to correspondent nodes receiving binding updates that update the binding cache relationships)**. Gudat et al. further discloses at least one Internet service provider associated with a label server adapted to supply an addressing label as a function of a target terminal station address of a data packet **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network containing sub-networks, such as the home network and the foreign network, which are Internet service providers, and for reference to the home network containing a home**

agent, which is a label server that supplies care-of addresses as a function of target terminal station addresses). Dillon et al. discloses a satellite terminal having a list of authorized identifiers used as a reception filter so that the satellite terminal processes the packet only if the identifier in the packet is in the list **(See column 2 lines 30-50 of Dillon et al. for reference to a an adaptor card that is part of a computer, which is a satellite terminal, including an Access Table, which is a list including authorized address fields, which are identifiers, used as a reception filter so that frames that do not have an address found in the Access Table are discarded and not processed).** The combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose at least one satellite having access to a table establishing a relationship between labels allocated to sub-networks and a means for sending a data packet associated with a given label.

With respect to claim 29, the combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose that the table is contained in the satellite.

With respect to claim 30, the combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose that the table is contained in a network control center.

With respect to claims 18 and 29-30, Cable et al., in the field of communications, discloses a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center **(See column 7 lines 16-30 and Figure 3 of Cable et al. for reference to a satellite 2 having a routing table located in the satellite and for reference to routing table being**

located also in a satellite remote control center 14 that communicates routing table updates to the routing table of the satellite). Using a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center has the advantage of allowing the satellite to act as an independent IP router such that data can be routed from the satellite to the specific destination indicated by the routing table.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cable et al., to combine using a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center, as suggested by Cable et al., with the system and method of Gudat et al., Yuan et al., and Dillon et al., with the motivation being to allow the satellite to act as an independent IP router such that data can be routed from the satellite to the specific destination indicated by the routing table.

With respect to claim 26, Gudat et al. discloses a satellite terminal storing the sending label of the ground station with which it is associated **(See column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a terminal on front shovel 80 storing the address of a router 84, which is a ground station, so that packets can be sent to the to the ground station).**

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. in view Yuan et al. and Dillon et al. as applied to claims 1-3, 8, and 20-24 above, and in further view of Mai et al. (U.S. Publication US 2002/0001310 A1).

With respect to claim 25, the combination of Gudat et al., Yuan et al., and Dillon et al. does not specifically disclose that each sub-network is a virtual sub-network.

With respect to claim 25, Mai et al., in the field of communications, discloses using sub-networks that are virtual networks in a satellite communication method (**See page 2 paragraph 21-25 of Mai et al. for reference to using virtual sub-networks in a satellite communication system and method**). Using sub-networks that are virtual networks in a satellite communication method has the advantage of allowing users to be combined into virtual groups such that data may be easily multicast to all members of a virtual group (**See the abstract of Mai et al. for reference to this advantage**).

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Mai et al., to combine using sub-networks that are virtual networks in a satellite communication method, as suggested by Mai et al., with the system and method of Gudat et al., Yuan et al., and Dillon et al., with the motivation being to allow users to be combined into virtual groups such that data may be easily multicast to all members of a virtual group.

7. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. in view of Yuan et al. Dillon et al. and Cable et al. as applied to claims 18, 26, and 29-30 above, and in further view of Hakulinen (WO 97/20413 as cited in the Applicant's IDS).

With respect to claims 27 and 28, the combination of Gudat et al., Yuan et al., Dillon et al., and Cable et al. does not specifically disclose a terminal station is a user station, which, with the satellite terminal, constitutes one and the same equipment unit.

With respect to claims 27 and 28, Hakulinen, in the field of communications discloses a terminal station that is a user station and satellite terminal in the same equipment unit **(See page 9 line 25 to page 10 line 6 and Figure 5 of Hakulinen for reference to receiving device 9 which is a terminal station that is a user station and satellite terminal in the same equipment unit)**. Using a terminal station that is a user station and satellite terminal in the same equipment unit has the advantage of simplifying the network structure such that each user station does not have to be separately connected to a satellite terminal, since the user station also acts as a satellite terminal.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Hakulinen, to combine using a terminal station that is a user station and satellite terminal in the same equipment unit, as suggested by Hakulinen, with the system and method of Gudat et al., Yuan et al., Dillon et al., and Cable et al., with the motivation being to simplify the network structure such that each user station does not have to be separately connected to a satellite terminal, since the user station also acts as a satellite terminal.

Response to Arguments

8. Applicant's arguments with respect to claims 1-3, 8, 18, and 20-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

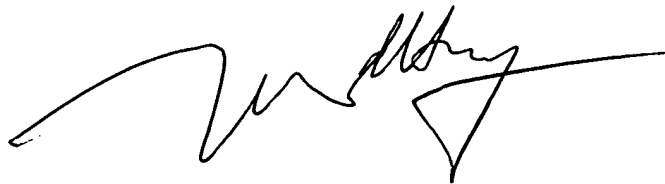
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a stylized, sweeping flourish extending to the right.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600